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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,458	08/16/2001	Nicholas Paul Cowley	042390.P23768	2970

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EXAMINER	
JONES III, CLYDE H	
ART UNIT	**PAPER NUMBER**
2623	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/931,458	COWLEY ET AL.	
	Examiner	Art Unit	
	Clyde H. Jones III	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/16/2006 has been entered.

Response to Arguments

2. Applicant's arguments filed in the 10/16/2006 Remarks have been fully considered but they are not persuasive.

The applicant argues that Rakib in view of Domino fail to teach or suggest a threshold generator, generating a threshold using an average of amplitude samples and transmitting a signal to a threshold generator indicating that the threshold generator is to exclude from an average any of the amplitude samples whose amplitude exceeds the threshold [Remarks, page 6, lines 10-page 7, line 2 & page 8, lines 1-5].

The examiner respectfully disagrees because Rakib teaches generating a threshold using the average of amplitude samples from multiple frequency bands which is used to compare/check for excessive noise in the multiple frequency bands (col. 6, lines 3-11). Rakib further teaches that this threshold from which the subbands/bins is

compared is derived from a calculation of on-going average amplitudes (col. 6, lines 21-23). Rakib failed to teach the removing the samples exceeding the threshold from the threshold generating averages however this is an obvious variant as evidenced by the Domino reference. It was widely known to skilled artisans at the time of the applicant's invention that it is desirable to remove samples exceeding a threshold when the threshold is generated from averages because errors such as impulsive noise and external interference would negatively effect the running average and thus the threshold. If the spikes in amplitude were included in the threshold generation than the threshold would be abnormally high which would prevent an accurate detection of inference in the future because the threshold would have been erroneously generated. Domino teaches that it is desirable, well known and obvious to remove those peaks above the threshold so that erroneous values do not bias and thus corrupt the running average (Domino-col. 7, lines 15-18). The applicant's arguments are nor persuasive.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 3, 4, 7, 9, 11, 12, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rakib et al. (US 6,426,983 B1) in view of Domino et al. (US 6,259,752 B1).

Regarding claim 1, the following limitations read on Rakib in further view of Domino:

a tuner comprising an input section for converting a radio frequency signal to a sequence in time of amplitude samples (col. 4, lines 20-36; fig. 1 item 10; in which Rakib's receiver unit (RU) is a "tuner" for receiving cable TV network channels; col. 4, lines 34-38, 43-48 & ADC 16 – fig. 1 in which "a sequence in time of amplitude samples" reads on the ADC samples taken when converting the analog signal amplitudes to digital signals for further digital processing);

a threshold generator for generating a threshold as a first function of an average of amplitudes of a plurality of the amplitude samples (col. 5, lines 13-20 – in which fig. 1, employs fig. 2; col. 5, line 60-col.6, line 25; in which Rakib's detection and cancellation circuit – 36, fig. 2- generates an adaptable threshold based on the amplitude of the samples in their respective frequency bands);

a comparator for comparing the amplitude of each of the amplitude samples with the threshold (col. 6, lines 5-10; in which Rakib's detection and cancellation circuit 36 compares the amplitude of the samples to the threshold);

a corrector responsive to the comparator for setting to zero each of the amplitude samples whose amplitude is greater than the threshold (col. 5, lines 47-58; col. 5, line 67-col. 6, line 2; col. 7, lines 1-16 & fig. 3; in which Rakib's detection and cancellation

circuit 36 sets frequency bins, i.e., the amplitude of frequency groups/bands generated by the filter bank with amplitudes above the threshold, to zero);

Rakib further discloses the average signal amplitude of a frequency bin containing an interference signal is higher than averages generated from **other** bins, which don't have an interfering signal (col. 7, lines 55-65) and that the threshold should exceed an acceptable variance of the amplitude (col. 7, lines 49-55).

However, Rakib fails to disclose transmitting a signal to the threshold generator indicating excluding from the average any of the amplitude samples whose amplitude exceeds the threshold.

In an analogous art, Domino teaches it is desirable to provide a system in an RF receiver that discards, i.e., generates a signal for calculating bias value/generating a threshold indicating removal of extremely high amplitude interference, i.e., above a threshold, signals from a running average of signal values, so that the erroneous signal does not abruptly change the running average (col. 7, lines 9-21).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify Rakib's system to include transmitting a signal to the threshold generator indicating excluding from the average any of the amplitude samples whose amplitude exceeds the threshold as taught by Domino, so that a better running average of signal amplitudes could be used to generate the threshold, i.e., the running average would not be corrupted by extremely high interference signals (Domino – col. 7, lines 15-16; Rakib – col. 7, lines 53-55). Furthermore, one of ordinary skill in the art would have know that eliminating unacceptable/abnormal data from a running

average improves the overall quality of the statistical/historical reference/threshold from which future data will be compared by providing a reference which is closer to an tolerable/acceptable value.

In regards to claims 2, Rakib in view of Domino teach the corrector is arranged to set to zero n consecutive ones of the samples after each of the samples whose amplitude is greater than said threshold, where n is a positive integer" (Rakib – col. 8, line 62 – col. 9, line 2; in which Rakib's system is **arranged** to erase, i.e., set to zero, additional samples adjacent/after the bin/sample containing the interference, so spilled out interference is removed from adjacent bins/samples; col. 4, lines 43-48; in which samples are also delayed in time for excision of interference from the consecutive samples at any time).

In regards to claims 3, Rakib in view of Domino teach the corrector is arranged to set to zero m consecutive ones of the amplitude samples before each of the amplitude samples whose amplitude is greater than the threshold, where m is a positive integer (Rakib – col. 8, line 62 – col. 9, line 2; in which Rakib's system is **arranged** to erase, i.e., set to zero, samples adjacent/before the bin/samples containing interference, so spilled out interference is removed from adjacent bins/samples).

Regarding claim 4, Rakib in view of Domino disclose the further limitation the average is a moving average (col. 6, lines 21-25; in which Rakib discloses an adaptive, i.e., moving, average calculating process).

Regarding claim 7, Rakib in view of Domino teach the input section comprises a zero intermediate frequency converter (Rakib - col. 4, lines 32-34; in which Rakib's down converter converts the signal to baseband).

Regarding claim 9, Rakib in view of Domino teach the input section comprises an analogue/digital converter for forming the amplitude samples as digital samples (Rakib - col. 4, lines 34-36; ADC 16 – fig. 1).

Regarding claim 11, Rakib in view of Domino teach a fast Fourier transformer for processing the amplitude samples from the corrector (Rakib - col. 9, 38-43; in which Rakib discloses use of the FFT for a simpler detection/cancellation algorithm and reduced performance requirements of the processor).

Regarding claim 12, the following limitations read on Rakib in further view of Domino:

a tuner comprising an input section for converting a radio frequency signal to a sequence in time of amplitude samples (col. 4, lines 20-36; fig. 1 item 10; in which Rakib's receiver unit (RU) is a "tuner" for receiving cable TV media through network

channels; col. 4, lines 34-38, 43-48 & ADC 16 – fig. 1 in which "a sequence in time of amplitude samples" reads on the ADC samples taken when converting the analog signal amplitudes to digital signals for further digital processing);

a threshold generator for generating a threshold as a first function of an average of amplitudes of a plurality of samples of the amplitude samples (col. 5, line 60-col.6, line 25; in which Rakib's detection and cancellation circuit – 36, fig. 2- generates an adaptable threshold based on the amplitude of the samples in their respective frequency bands);

a comparator for comparing the amplitude of each of the amplitude samples with the threshold (col. 6, lines 5-10; in which Rakib's detection and cancellation circuit 36 compares the amplitude of the samples to the threshold); and

a corrector responsive to the comparator for setting to zero each of the amplitude samples whose amplitude is greater than the threshold (col. 5, lines 47-58; col. 5, line 67-col. 6, line 2; col. 7, lines 1-16 & fig. 3; in which Rakib's detection and cancellation circuit 36 sets frequency bins, i.e., the amplitude of frequency groups/bands generated by the filter bank with amplitudes above the threshold, to zero);

Rakib further discloses the average signal amplitude of a frequency bin containing an interference signal is higher than averages generated from **other** bins, which don't have an interfering signal (col. 7, lines 55-65) and that the threshold should exceed an acceptable variance of the amplitude (col. 7, lines 49-55).

However, Rakib fails to disclose transmitting a signal to the threshold generator indicating the exclusion from the average any of the amplitude samples whose amplitude exceeds the threshold.

In an analogous art, Domino teaches it is desirable to provide a system in an RF receiver that discards, i.e., generates a signal for calculating bias value/generating a threshold indicating removal of extremely high amplitude interference, i.e., above a threshold, signals from a running average of signal values, so that the erroneous signal does not abruptly change the running average (col. 7, lines 9-21).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify Rakib's system to include transmitting a signal to the threshold generator indicating the exclusion from the average any of the amplitude samples whose amplitude exceeds the threshold as taught by Domino, so that a better running average of signal amplitudes could be used to generate the threshold, i.e., the running average would not be corrupted by extremely high interference signals (Domino – col. 7, lines 15-16; Rakib – col. 7, lines 53-55). Furthermore, one of ordinary skill in the art would have know that eliminating unacceptable/abnormal data from a running average improves the overall quality of the statistical/historical reference/threshold from which future data will be compared by providing a reference which is closer to an tolerable/acceptable value.

Regarding the further limitation "set top box" Rakib in view of Domino fail to specifically disclose it. However, the examiner takes official notice that it would have been obvious to one of ordinary skill in the art at the time the invention was made to

modify Rakib's receiver unit to include a set top box for improving reception and decreasing susceptibility due to errors in the signal caused by local electromagnetic interference (e.g. noise impulse signals entering the set-top box from the switching on/off of a high power stereo amplifier near the STB).

Regarding claim 13, the following limitations read on Rakib in further view of Domino:

a television receiver comprising a tuner comprising an input section for converting a radio frequency signal to a sequence in time of amplitude samples (Rakib-col. 4, lines 20-36; fig. 1 item 10; in which Rakib's receiver unit (RU) is a "tuner" for receiving cable TV media through network channels; col. 4, lines 34-38, 43-48 & ADC 16 – fig. 1 in which "a sequence in time of amplitude samples" reads on the ADC samples taken when converting the analog signal amplitudes to digital signals for further digital processing);

a threshold generator for generating a threshold as a first function of an average of amplitudes of a plurality of samples of the amplitude samples (col. 5, line 60-col.6, line 25; in which Rakib's detection and cancellation circuit – 36, fig. 2- generates an adaptable threshold based on the amplitude of the samples in their respective frequency bands);

a comparator for comparing the amplitude of each of the amplitude samples with the threshold" (col. 6, lines 5-10; in which Rakib's detection and cancellation circuit 36 compares the amplitude of the samples to the threshold);

a corrector responsive to the comparator for setting to zero each of the amplitude samples whose amplitude is greater than the threshold (col. 5, lines 47-58; col. 5, line 67-col. 6, line 2; col. 7, lines 1-16 & fig. 3; in which Rakib's detection and cancellation circuit 36 sets frequency bins, i.e., the amplitude of frequency groups/bands generated by the filter bank with amplitudes above the threshold, to zero);

Rakib further discloses the average signal amplitude of a frequency bin containing an interference signal is higher than averages generated from **other** bins, which don't have an interfering signal (col. 7, lines 55-65) and that the threshold should exceed an acceptable variance of the amplitude (col. 7, lines 49-55).

However, Rakib fails to disclose transmitting a signal to the threshold generator indicating exclusion from the average any of the amplitude samples whose amplitude exceeds the threshold.

In an analogous art, Domino teaches it is desirable to provide a system in an RF receiver that discards, i.e., generates a signal for calculating bias value/generating a threshold indicating removal of extremely high amplitude interference, i.e., above a threshold, signals from a running average of signal values, so that the erroneous signal does not abruptly change the running average (col. 7, lines 9-21).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify Rakib's system transmitting a signal to the threshold generator indicating exclusion from the average any of the amplitude samples whose amplitude exceeds the threshold as taught by Domino, so that a better running average of signal amplitudes could be used to generate the threshold, i.e., the running

average would not be corrupted by extremely high interference signals (Domino – col. 7, lines 15-16; Rakib – col. 7, lines 53-55). Furthermore, one of ordinary skill in the art would have know that eliminating unacceptable/abnormal data from a running average improves the overall quality of the statistical/historical reference/threshold from which future data will be compared by providing a reference which is closer to an tolerable/acceptable value.

Regarding claim 14, the following limitations read on Rakib in view of Domino:

a tuner comprising an input section for converting a radio frequency signal to a sequence in time of amplitude samples (col. 4, lines 20-36; fig. 1 item 10; in which Rakib's receiver unit (RU) is a "tuner" for receiving cable TV media through network channels; col. 4, lines 34-38, 43-48 & ADC 16 – fig. 1 in which "a sequence in time of amplitude samples" reads on the ADC samples taken when converting the analog signal amplitudes to digital signals for further digital processing);

a threshold generator for generating a threshold as a first function of an average of amplitudes of a plurality of samples of the amplitude (col. 5, line 60-col.6, line 25; in which Rakib's detection and cancellation circuit – 36, fig. 2- generates an adaptable threshold based on the amplitude of the samples in their respective frequency bands);

a comparator for comparing the amplitude of each of the amplitude samples with the threshold (col. 6, lines 5-10; in which Rakib's detection and cancellation circuit 36 compares the amplitude of the samples to the threshold);

a corrector responsive to the comparator for setting to zero each of the amplitude samples whose amplitude is greater than the threshold (col. 5, lines 47-58; col. 7, lines 1-16 & fig. 3; in which Rakib's detection and cancellation circuit 36 sets frequency bins, i.e., the amplitude of frequency groups/bands generated by the filter bank with amplitudes above the threshold, to zero);

Rakib further discloses the average signal amplitude of a frequency bin containing an interference signal is higher than averages generated from **other** bins, which don't have an interfering signal (col. 7, lines 55-65) and that the threshold should exceed an acceptable variance of the amplitude (col. 7, lines 49-55).

However, Rakib fails to disclose transmitting a signal to the threshold generator indicating exclusion from the average any of the samples whose amplitude exceeds the threshold.

In an analogous art, Domino teaches it is desirable to provide a system in an RF receiver that discards, i.e., generates a signal for calculating bias value/generating a threshold indicating removal of extremely high amplitude interference, i.e., above a threshold, signals from a running average of signal values, so that the erroneous signal does not abruptly change the running average (col. 7, lines 9-21).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify Rakib's system to include transmitting a signal to the threshold generator indicating exclusion from the average any of the samples whose amplitude exceeds the threshold as taught by Domino, so that a better running average of signal amplitudes could be used to generate the threshold, i.e., the running average

would not be corrupted by extremely high interference signals (Domino – col. 7, lines 15-16; Rakib – col. 7, lines 53-55). Furthermore, one of ordinary skill in the art would have know that eliminating unacceptable/abnormal data from a running average improves the overall quality of the statistical/historical reference/threshold from which future data will be compared by providing a reference which is closer to an tolerable/acceptable value.

Regarding the further limitation "television signal recorder" Rakib in view of Domino fail to specifically disclose it. However, the examiner takes official notice that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rakib's receiver unit to include a VCR with tuning capability (as is well known in the art) for improving reception and decreasing susceptibility due to errors in the signal caused by local electromagnetic interference (e.g. noise impulse signals entering the VCR from the switching on/off of a high power stereo amplifier near the STB).

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rakib et al. (US 6,426,983 B1) in view of Domino et al. (US 6,259,752 B1) and in further view of Staudinger et al. (US 6,407,634 B1).

Regarding claim 5, Rakib in view of Domino disclose a threshold that exceeds the calculated average by some predetermined amount (Rakib- col. 5 line 65 – col. 6,

line 9; col. 7, lines 21-31) and that the threshold should exceed an acceptable variance of the amplitude (col. 7, lines 49-55).

However, Rakib in view of Domino fail to disclose greater than a product of the average and a peak-to-average ratio of the amplitude samples.

In an analogous art, Staudinger discloses a mathematical measurement of error, i.e., distortion/interference, in a sampled signal ($V_{out}(t)$, fig. 1) is proportional to the product of the samples signal average ($E_{out}(t)_{ave}$) and the peak to time average value of the signal (H_D) (col. 4, line 64 – col. 5, line 8).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the system of Rakib in view of Domino to include the greater than a product of the average and a peak-to-average ratio of the amplitude samples as taught by Staudinger because it is well known that there is a mathematical relationship between the known/acceptable peak-to-average ratio of a signal and the average amplitude of the received/instant signal, which indicates with a higher degree of probability that amplitude samples above the threshold/or acceptable peak value would be caused by unacceptable levels of interference, which provides a more reliable indication of the presence of interference (Rakib - col. 7, lines 51-55).

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rakib et al. (US 6,426,983 B1) in view of Domino et al. (US 6,259,752 B1) and in further view of Ma et al. (US 6,292,054 B1).

Regarding claim 6, Rakib in view of Domino disclose a threshold that exceeds the calculated average by some predetermined amount (col. 5 line 65 – col. 6, line 9).

However, Rakib in view of Domino fail to disclose the "threshold is greater than three times said average".

In an analogous art Ma discloses a typical peak-to-average ratio for a CDMA standard transmission is 9.6 dB with a peaking probability of 10^-4, i.e., one in 10,000 peaks exceeds a certain threshold above average power (col. 3, lines 44-50, fig. 1 – item 14). Furthermore a peak-to-average ratio of 9.6 dB correlates to a maximum peak value of closely 3.02 times the average, i.e., PEAK = 3.02 · MEAN, from the formula for converting the ratio of field strength values to decibels, e.g., $ratio_{dB} = 20 \log_{10}(value_1/value_0) \rightarrow ratio_{dB}/20 = \log_{10}(value_1/value_0) \rightarrow value_1/value_0 = 10^{(ratiodB/20)} \rightarrow value_1 = value_0 \cdot 10^{(ratiodB/20)}$. Substituting 9.6 dB (the peak-to-average ratio) for $ratio_{dB}$ in this formula yields 3.02 · MEAN = PEAK.

It would have been obvious to one skilled in the art at the time of the invention to modify the system of Rakib in view of Domino to include the limitation "threshold is greater than three times said average" as taught by Ma, so that the probability of the system suppressing interference signals and not payload data is higher (Ma - col. 3, lines 44-50, fig. 1 – item 14).

7. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rakib et al. (US 6,426,983 B1) in view of Domino et al. (US 6,259,752 B1) and in further view of Pulley et al. (US 6,754,292, B1).

Regarding claim 8, Rakib in view of Domino disclose digital communication in any digital communication systems with strong interfering signal (Rakib- col. 4, lines 9-12).

However Rakib in view of Domino fail to specifically disclose the input section has in-phase and quadrature outputs for supplying the amplitude samples.

In an analogous art Pulley discloses a digital TV receiver/tuner with ADC that produces in-phase (I) and quadrature (Q) samples for decoding a DVB-T standard signal (col. 2, lines 1-13).

It would have been obvious to one of ordinary skilled in the art at the time of the applicant's invention to modify the system of Rakib in view of Domino to include the input section has in-phase and quadrature outputs for supplying the amplitude samples as taught by Pulley for the advantage of providing better quality of service to customers with equipment for decoding and processing DVB-T standard television signals (col.2, lines 1-6) and furthermore it would have been well known to one skilled in the art that commercial quadrature signal processing components (e.g. hardware/software) are readily available.

Regarding claim 10, Rakib in view of Domino disclose digital communication in any digital communication system with strong interfering signals (col. 4, lines 9-12).

However Rakib in view of Domino fail to specifically disclose a COFDM demodulator.

In an analogous art Pulley discloses a digital TV receiver/tuner receives DVB-T standard signals, which utilize the COFDM modulating technique (col. 2, lines 1-13).

It would have been obvious to one skilled in the art at the time the invention was made to modify the system of Rakib and Domino to include a COFDM demodulator as taught by Pulley for the advantage of providing better quality of service to customers with equipment for receiving and decoding DVB-T standard television signals (col.2, lines 1-6) and furthermore it is well known that signals transmitted using the COFDM technique resist different types of distortion/interference (e.g., multipath, burst noise, etc.) well.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clyde H. Jones III whose telephone number is 571-272-5946. The examiner can normally be reached on 9-5:30 p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Grant can be reached on 571-272-7294. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CJ

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